

## **REMARKS**

Entry of the foregoing, re-examination and reconsideration of the subject matter identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111, and in light of the remarks which follow, are respectfully requested.

Claims 1 and 2 have been amended to incorporate therein the partial subject matter of claim 4. In addition, claims 5 and 16 have been amended to change their dependency. Further, claims 4, 9, 15 and 20 have been canceled without prejudice or disclaimer. Upon entry of the Amendment, claims 1-3, 5-8, 10-14, 16-19 and 21-24 will be all the claims pending in the application.

### **I. Information Disclosure Statement**

Applicants submit herewith a copy of each document cited in Form PTO-1449 filed January 27, 2005, along with an English abstract thereof. The Examiner is respectfully requested to initial and date the Form PTO-1449 filed January 27, 2005, and return to the undersigned a signed copy in the next PTO communication.

### **II. Response to Rejection under 35 U.S.C. § 112, Second Paragraph**

Claims 5 and 15 were rejected under 35 U.S.C. § 112, second paragraph, for the reasons set forth in paragraphs 2 and 3 of the Office Action.

Applicants respectfully submit that the rejection of claim 15 is moot, because claim 15 has been canceled.

Further, Applicants respectfully traverse the rejection of claim 5 (as well as claim 16). Specifically, claims 5 and 16 recite that " $Y_1$  and  $Y_2$  groups in the general formula (1) are ...," and indirectly relate back to claims 1 and 2, respectively, where formula (1) is defined

concerning the recited (meth)acrylic acid ester compound. That is, Y<sub>1</sub> and Y<sub>2</sub> groups are not related to formula (2). The Examiner appears to misread the claim language of claims 5 and 16. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the § 112, second paragraph, rejection.

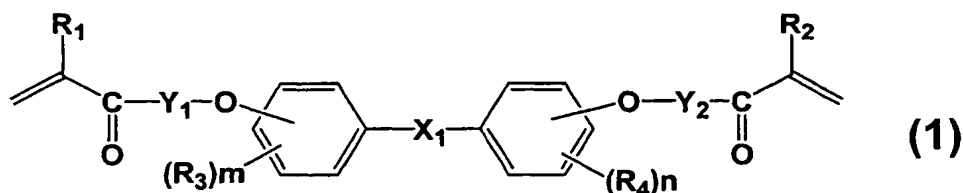
### **III. Response to Rejection under 35 U.S.C. § 103(a)**

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as obvious over WO 03/011925 to Herold et al. (WO '925) in view of U.S. Patent No. 6,172,140 to Toh et al. for the reasons discussed in paragraph 6 of the Office Action.

Applicants respectfully submit that the present claims are patentable over the cited references for at least the following reasons.

Independent claim 1 recites a photopolymerizable composition comprising a polymerizable compound and a photopolymerization initiator, wherein the polymerizable compound comprises (a) a bifunctional (meth)acrylic acid (thio)ester compound containing a sulfur atom in the molecule, and (b) at least one of a (meth)acrylic acid ester compound and a bifunctional (meth)acrylic acid ester compound having a urethane linkage. Independent claim 2 recites a photopolymerizable composition comprising a polymerizable compound and a photopolymerization initiator, wherein the polymerizable compound comprises (a) a bifunctional (meth)acrylic acid (thio)ester compound containing a sulfur atom in the molecule, and (b) a (meth)acrylic acid ester compound.

The (meth)acrylic acid ester compound recited in claims 1 and 2 has the following general formula (1):



wherein  $R_1$  and  $R_2$  are each independently a hydrogen atom or a methyl group;  $R_3$  and  $R_4$  are each independently an alkyl group, an aralkyl group, an aryl group or a halogen atom;  $m$  and  $n$  are each an integer of 0 to 2;  $X_1$  is an alkylidene group having 1 to 3 carbon atoms; and  $Y_1$  and  $Y_2$  are each independently a poly(oxyalkylene) group with the proviso that at least one of  $Y_1$  and  $Y_2$  is a poly(oxyalkylene) group having a hydroxy group.

This (meth)acrylic acid ester compound has an active hydrogen derived from a -OH group, which configuration makes it possible to enhance the affinity of the presently claimed composition to a dye used in dyeing, thereby improving the dyeing property of a cured product of the composition (see data in Table 1 of the present specification).

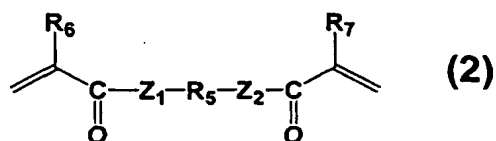
Neither WO '925 nor Toh et al. disclose or suggest the above-mentioned advantages of the present invention. In addition, Toh et al. merely describes at column 6, line 65, *et seq.*, which is relied upon by the Examiner, suppressing the lowering of tintability.

In view of the foregoing, Applicants respectfully submit that the present claims are not obvious over WO '925 in view of Toh et al. and thus the rejection should be withdrawn.

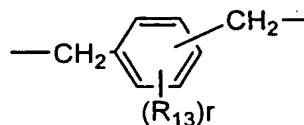
#### IV. Response to Rejection under 35 U.S.C. § 102(b)

Claims 2 and 22-24 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Nos. 6,206,550 and 5,969,867 to Fukushima et al. for the reasons set forth at paragraph 8 of the Office Action.

Applicants respectfully submit that the present claims are novel over Fukushima et al. Specifically, claim 2 as amended, from which claims 22-24 depend, directly or indirectly, recites (a) a bifunctional (meth)acrylic acid (thio)ester compound containing a sulfur atom in the molecule represented by the following formula (2):

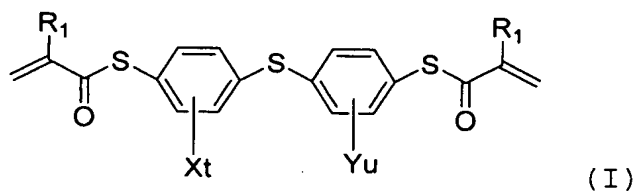


wherein R<sub>5</sub> is a chain alkylene group having one or more sulfur atoms in the group or R<sub>5</sub> is the following linking group; R<sub>6</sub> and R<sub>7</sub> are each independently a hydrogen atom or an alkyl group; and Z<sub>1</sub> and Z<sub>2</sub> are each independently an oxygen atom or a sulfur atom with the proviso that one of Z<sub>1</sub> and Z<sub>2</sub> is a sulfur atom in case R<sub>5</sub> is the following linking group:



wherein R<sub>13</sub> is an alkyl group, an aralkyl group, an aryl group or a halogen atom; and r is an integer from 0 to 2.

In contrast, Fukushima et al. merely disclose the following compound (I), which does not meet the requirements of component (a) defined in present claim 2:



For at least this reason, Fukushima et al. do not anticipate the present claims. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

**V. Conclusion**

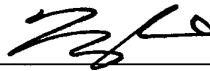
From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (202) 452-7932 at his earliest convenience.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: May 7, 2007

By: \_\_\_\_\_



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